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WILLIAM J. BYRNES
ADMITTED IN D.C., NEW YORK, AND VA



March 17, 1994

OUR FILE NO.
1193-101-63

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, N.W.
Washington, D.C. 20554

Re: NewNet Corporation
RM No. 8435

Dear Mr. Caton:

Transmitted herewith on behalf of NewNet Corporation, are an original and four copies of its Comments in support of the petition for rulemaking filed by Western Multiplex Corporation.

Please address any questions concerning this matter directly to the undersigned.

Very truly yours,

William J. Byrnes

WJB/lgs

Enclosure

cc: Mr. Peter K. Beck

Before The

# Federal Communications Commission

Washington, D.C. 20554

| | | |
|---|---|---|
| In The Matter Of | ) | |
| | ) | |
| Amendment of the Part 15 of the Rules | ) | RM No. 8435 |
| With Regard to the Operation of Spread | ) | |
| Spectrum Transmitters With Directional | ) | |
| Antennas | ) | |

TO: The Commission

## COMMENTS

NewNet Corporation, by its attorney and pursuant to Section 1.401 of the Commission's Rules, hereby submits its comments in support of the petition for rulemaking filed by Western Multiplex Corporation to amend Section 15.247(b) with respect to restrictions on use of spread spectrum transmitters with directional antennas, in response to the Commission's Public Notice of February 16, 1994 inviting comment in the above-captioned rulemaking (Report 2000, #41771).

## I. INTRODUCTION

1. NewNet is planning to establish local telecommunications networks using spread spectrum radio equipment currently in manufacture and now in widespread use by the public. NewNet has received expressions of public interest in telecommunications network applications which are currently made technically and economically feasible by spread spectrum radios. This interest indicates a public need growing beyond that need already demonstrated by sales of WMC and competitors' radio products and by their widespread use in the United

States, which are recited in the Petition. The effect of the Petition's proposed changes to antenna gain will be to maintain currently available point-to-point transmission distances and related performance which serve the public interest by:

- enabling economical network construction,
- encouraging competition,
- uniquely enabling applications serving rural and low population density localities, and
- causing no known interference.

NewNet believes that this public interest will be best served by adopting the Petition's proposed rule change.

## II. THE LIMITATION ON DIRECTIONAL ANTENNAS IN THE EXISTING RULE HAS NOT YET TAKEN EFFECT

**2.** Prior to 1990, the only relevant limitation on the power of spread spectrum systems using the three ISM bands (902-928 MHz, 2400-2483.5MHz and 5725-5850 MHz)[1] was that they may "transmit within these bands with a maximum peak power output power of 1 watt." The problem was introduced in 1990 when there was added the provision that: "If transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi." Amendment of Parts 2 and 15 of the Rules with Regard to the Operation of Spread Spectrum Systems, 5 FCC Rcd 4123 (1990), which ironically enough was supposed to have been a proceeding "to facilitate greater flexibility in the design and use of low

[1] This limitation was adopted in Authorization of Spread Spectrum and Other WideBand Emissions, 101 FCC 2d 419, 430 (1985) and originally codified in Section 15.126(a) of the Commission's Rules. It was subsequently incorporated into Section 15.247(b).

power, non-licensed spread spectrum systems." 5 FCC Rcd at 4123. The change addressed here, which clearly was one to impede flexibility and development of spread spectrum systems, was suggested by Micrilor and apparently was not commented upon by any party interested in use of directional antennas for spread spectrum use. The lack of comment may well have been the result of the anomaly of a rule change that seriously impedes development of spread spectrum communications being proposed in the course of a proceeding ostensibly designed to achieve the opposite result. What had taken place was obscured thereafter by the effect of the transition provision in Section 15.37 of the Rules that was introduced in 1989 to accommodate a major rewriting of Part 15 that did not initially involve Section 15.247 at all. Revision of Part 15, 4 FCC Rcd 3493, 3516. These 1989 transition provisions then were applied to the 1990 changes. The fact that the Commission did not appear to realize that the significance of its new limitation on directional antennas is suggested by its explanation that "the dates specified in Section 15.37 provide ample time for adjustment to the new rules because these rules generally represent a relaxation of existing standards and new standards intended to clarify qualifying criteria. 5 FCC Rcd at 4127. The change with respect to directional antennas was anything but a "relaxation."

## III. TECHNICAL EFFECTS OF PROPOSED RULE CHANGE

3. The proposed rule change recited in Western Multiplex's Petition would have the effect of maintaining the availability of 1-watt transmitter power for point-to-point transmission in the 2400-2483.5 MHz and 5725-5850 MHz bands and the use of that power in directional antennas that are currently (until June 23, 1994) unrestricted as to

antenna gain. Spread spectrum radios having such power levels have been produced and are now in widespread use with unrestricted gain directional antennas in the United States and have resulted in no known case of harmful interference.

4. The Petition's proposed rule change will be to maintain the availability of 1-watt transmitter power for use with directional antennas that are unrestricted as to antenna gain beyond June 23, 1994 in the 2400-2483.5 MHz and 5725-5850 MHz bands.

5. Restriction of directional antenna gains to 6 dBi, effective June 23rd under the current rule will have the effect of limiting point-to-point transmission distances to approximately 4 miles under ideal conditions. Allowing for fade margins, which are affected by terrain, local site characteristics, and climatic conditions, resulting realistic transmission distances will be limited to between 1 and 2 miles.

## IV. EFFECTS ON THE PUBLIC INTEREST OF PROPOS ED RULE CHANGE

6. Absent the proposed rule change, service of the public interest already demonstrated through the sales and use of spread spectrum radios, used primarily in point-to-point mode, and transmitting distances up to 40 miles as a result of unrestricted directional antenna gain will be significantly diminished. Many similar uses and installations will no longer be permitted.

7. In addition, the effective limitation of point-to-point transmission to 1 to 2 mile distances will preclude many network applications which result from the previously unavailable economies and flexibility offered by these radios. Such applications include local private

telecommunications and data communications networking. In these applications, point-to-point transmission currently supports the extension of networks to sites that are otherwise inaccessible or reaches those sites more economically than any other means. Prospective applications of which NewNet is aware require digital telecommunications and data communications bit rates which are well within the capability of currently offered spread spectrum radios, but are not available through any other affordable transmission facilities. Specific traffic proposed for private use includes compressed educational television and image communications as well as basic voice telephony. With current radios, such applications become economically feasible, because alternative distribution facilities such as fiber are economical and therefore available only in dense population areas. Such applications are now affordable in rural and low density areas. In these localities particularly, point-to-point transmission using directional antennas make the most efficient use of available spectrum, and transmission distances of several miles are required.

8. It is clearly in the public interest to maintain and not restrict spread spectrum technologies now demonstrated, non-interfering capabilities to distribute new as well as existing forms of traffic, to attain significant equipment economies and low cost of installation, to distribute traffic in less densely populated and even purely rural areas, and to compete with currently unaffordable services.

## V. EFFECT ON TRADE

9. Restrictions on directional antenna gain, combined with prohibition even of manufacture of non-compliant radios and

radio/antenna systems (Section 15.37) are likely to be enforced by requiring manufacturers to combine or package radios and antennas in such a way that dealers or users cannot modify them either purposely or unwittingly to violate the rules. Such packing will result both in more expensive systems and in limiting the flexibility to match an antenna with a radio to meet the requirements of specific, legitimate applications.

10. Such packaged systems will also have much narrower applicability in international markets where restrictions deemed appropriate in the United States may not exist or where applications may require greater flexibility, and where a significant and growing volume of currently manufactured spread spectrum systems are currently being sold.

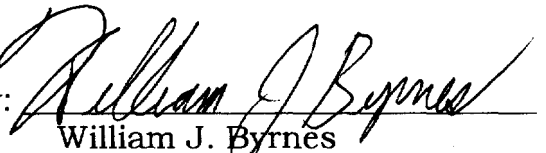
11. The proposed rule change will have the incidental effect of relieving such a restriction on manufacturing. The public interest in maintaining the current U.S. lead in spread spectrum American manufactures in international markets will be served by approval of the proposed change to the rule.

## VI. CONCLUSION

12. The Commission should grant the relief requested by Western Multiplex Corporation or, in the vent that it believes further study is needed, it should extend the present transition deadline of June 23, 1994 until such time as the Commission takes to complete the necessary proceedings.

Respectfully submitted,

NewNet Corporation

By: 
William J. Byrnes
Its Attorney

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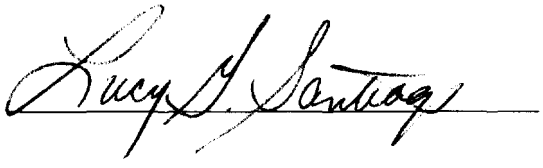
March 17, 1994

CERTIFICATE OF SERVICE

The undersigned, an employee of Haley, Bader & Potts, hereby certifies that the foregoing document was mailed this date by First Class U.S. Mail, postage prepaid, or was hand-delivered*, to the following:

Mr. John Woods
President
Western Multiplex Corporation
300 Harbor Boulevard
Belmont, CA 94002



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